ENERGY &
TELECOMMUNICATIONS
INTERIM COMMITTEE 2019-2020

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CHAPTER 1: EXECUTIVE SUMMARY

The Pacific Northwest power system faces a host of uncertainties, from compliance with federal carbon dioxide emissions regulations to future fuel prices, resource retirements, salmon recovery actions, economic growth, a growing need to meet peak demand, and how increasing renewable resources would affect the power system. The Council's Seventh Power Plan addresses these uncertainties and provides guidance on which resources can help ensure a reliable and economical regional power system over the next 20 years.

In developing its plan, the Council relies on feedback from technical and policy advisory groups and input from a broad range of interests, including utilities, state energy offices, and public interest groups.

The plan also recognizes that individual utilities, which have varying access to electricity markets and varying resource needs, may require near-term investments in resources to meet their adequacy and reliability needs. For example, some utilities face significant near-term resource challenges, particularly if there is limited access to surplus resources from others. These factors limit the ability of the regional resource strategy to be specific about optioning and construction dates for natural gas-fired resources, or for the types of natural gas-fired generation. As a result, new gas-fired generation may be required, even if utilities deploy demand response resources and develop the energy efficiency called for in the plan.

Using modeling to test how well different resources would perform under a wide range of future conditions, energy efficiency consistently proved the least expensive and least economically risky resource. In more than 90 percent of future conditions, cost-effective efficiency met *all* electricity load growth through 2030 and in more than half of the futures *all* load growth for the next 20 years. It's not only the single largest contributor to meeting the region's future electricity needs; it's also the single largest source of new peaking capacity. If developed aggressively, in combination with past efficiency acquisition, the energy efficiency resource could approach the size of the region's hydroelectric system's firm energy output, adding to the Northwest's heritage of clean and affordable power. Figure 1 - 1 shows the composition of the plan's resource portfolio.

Acquiring this energy efficiency is the primary action for the next six years. The plan's second priority is to develop the capability to deploy demand response resources or rely on increased market imports to meet system capacity needs under critical water and weather conditions. While the region's hydroelectric system has long provided ample peaking capacity, it's likely that under low water and extreme weather conditions we'll need additional peaking capacity to maintain system adequacy. Because the probability of such events is low (but real), demand response resources, which have low development and "holding" costs are best-suited to meet this need. However, whether and to what extent the region should rely on demand response or increase its reliance on power imports to meet regional resource adequacy requirements for winter capacity depends on their comparative availability, reliability, and cost.

CHAPTER 1
EXECUTIVE SUMMARY

Montana's energy landscape is evolving, changing from a state that produces more electricity than our citizens can use 24x7, 365 days a year, to a state where there is a growing risk there won't be enough electricity to serve our citizens at critical times of peak load. A similar situation is occurring throughout the Pacific Northwest – a key source for NorthWestern's market purchases. The NorthWestern Energy Electricity Supply Resource Procurement Plan addresses this critical risk and outlines how the company's Montana customers' energy needs will be met with reliable energy at the lowest cost.

Reductions in regional and in-state coal generation are limiting the ability of Montana to import and export energy, and growth in customer energy demand across the Pacific Northwest means the energy available from the market will be less certain at key times and prices will be more volatile. NorthWestern Energy has been reducing our customers' exposure to the market by developing a portfolio that includes hydro, natural gas, coal, wind, and solar generation. However, in order to manage the increasing risk to our customers and continue providing them with reliable energy, NorthWestern Energy must work quickly to reduce our customers' exposure to power markets, especially for certain types of power products.

In early March 2019, Mid-C peak bulk power prices reached nearly $1,000/MWh for the first time since 2000 and natural gas also traded at record high prices. While the region was experiencing extreme weather, analysis indicates that decreased market liquidity was also a significant factor. NorthWestern is concerned events like this may become more

Table 4-6. DSM Forecast Acquisition

Forecast Electric DSM Acquisition				
Tracker Year	DSM Acquisition (aMW)	NEEA DSM Acquisition (aMW)	USB Acquisition (aMW)	Total DSM NEEA USB
2018-2019	3.49	0.41	0.45	4.35
2019-2020	3.49	0.41	0.45	4.35
2020-2021	3.49	0.41	0.45	4.35
2021-2022	2.95	0.40	0.42	3.77
2022-2023	2.95	0.40	0.42	3.77
2023-2024	2.95	0.40	0.42	3.77
2024-2025	2.95	0.40	0.42	3.77
2025-2026	2.95	0.40	0.42	3.77
2026-2027	2.95	0.40	0.42	3.77
2027-2028	2.95	0.40	0.42	3.77
2028-2029	2.95	0.40	0.42	3.77
2029-2030	2.95	0.40	0.42	3.77
2030-2031	2.95	0.40	0.42	3.77
2031-2032	2.95	0.40	0.42	3.77
2032-2033	2.95	0.40	0.42	3.77
2033-2034	2.95	0.40	0.42	3.77
2034-2035	2.95	0.40	0.42	3.77
2035-2036	2.95	0.40	0.42	3.77
Cumulative	54.72	7.23	7.65	69.60

These contractors are supported by DNV GL employees who have responsibility for communication of E+ programs to commercial/small industrial customers in an effort to identify, qualify, and cultivate energy saving projects for follow-up by the contractors.

Historic DSM, NEEA, USB

Table 4-5 shows budget and spend for DSM and NEEA and acquisition target and acquisition reported for DSM, NEEA, and USB.

Table 4-5. Historical DSM NEEA USB

Historic: Budget, Acquisition Target, Spend, Acquisition Reported (no USB Budget or Spend inlnded)							
Tracker Year	DSM + NEEA Budget	DSM NEEA USB Acquisition Target (aMW)	DSM Spend	DSM Acquisition Reported (aMW)	NEEA Spend	NEEA Acquisition Reported (aMW)	USB Acquisition Reported (aMW)
2013-2014	$15,455,132	6.00	$ 9,339,577	4.90	$1,812,813	1.14	0.59
2014-2015	$16,440,140	6.00	$ 5,414,378	3.99	$1,015,012	1.32	0.38
2015-2016	$17,979,217	6.00	$ 6,051,582	3.41	$1,219,625	1.14	0.58
2016-2017	$ 5,883,338	4.35	$ 6,524,555	4.25	$1,221,149	1.23	0.35
2017-2018	$ 6,417,962	4.35	$ 7,807,527	5.26	$1,523,720	1.54	0.27
Cumulative	$62,175,790	26.70	$35,137,618	21.81	$6,792,319	6.37	2.17

DSM Budget and Spending

The tables below show the Electric DSM Acquisition Goals that include energy savings estimates from DSM, NEEA, and USB for each year and forecast program expenses for DSM and NEEA over the 20-year period. The DSM savings component is developed from the Electric Potential Study; the NEEA component represents NorthWestern's expectation of the electric savings produced through NEEA activities for NorthWestern's Montana service territory; and the USB component represents NorthWestern's current expectations of the electric savings that will be generated by USB programs.